

THE IMMIGRATION OF LEPIDOPTERA TO THE
BRITISH ISLES IN 1987

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1987, with a very late spring, a cold and sunless summer, and an early autumn with great gales and heavy rains, has the reputation of being one of the poorest seasons for Lepidoptera in recent times, except perhaps in the south western counties. Immigrant species shared in this poverty until the middle of August and, though there was some improvement later, recorded numbers of most remained below normal. There were exceptions. A major event was the abundance of *Rhodometra sacraria* L., of which more than 800 have been reported; the September invasion of *Agrius convolvuli* L. was perhaps above normal; and of the common butterflies, *Vanessa atalanta* L. had a good year.

Of the rarities, a single *Iphiclides podalirius* Scop., which may have been immigrant, was found on a pavement at Walthamstow, South Essex on July 5; two *Apamea lateritia* Hufn. were caught at Dovercourt, South Essex on July 7 and 24; there was a small invasion of *Hyles gallii* Rott. at the end of July, curiously spread from South Devon to Shetland; one *Chrysodeixis chalcites* Esp. at Portland, Dorset, September 13; three *Diachrysia orichalcea* Fab. in South Hampshire, Surrey and Isle of Wight, August 15 and 25, September 20; and a single *Hypena obsitalis* Hb. at Perranporth, South Cornwall, November 8. But there were this year no additions to the British list.

There were many reports of possible immigrant examples of resident species, including a fresh *Nymphalis polychloros* L. at Radipole, Dorset, on May 5, and two at Bradwell-on-Sea, Essex on April 24; a single *Idaea ochrata* Scop. at Axbridge, South Devon, July 21; singles of *Enargia paleacea* Esp. at Walberton, West Sussex and Dartford, West Kent on July 14 and 15; and of the Crambid *Platytes alpinella* Hb. at Axminster, South Devon and Horsmonden, West Kent, on these same dates.

The small numbers of species, and of individuals of most of them reported, seem to reflect small size of the immigrations rather than a lack of them. Five *Cynthia cardui* L. were seen between March 3 and 21. A small immigration in the first week of April and in early May included many *Vanessa atalanta* L. and *Plutella xylostella* L., but only few *Colias croceus* Geoffroy, *Cynthia cardui* L., *Macroglossa stellatarum* L., *Peridroma saucia* Hb., *Autographa gamma* L., *Agrotis ipsilon* Hufn. and *Udea ferrugalis* Hb. In contrast to the great immigration of April 1985, this included none of the scarcer species and may have come from France in mainly south and south east winds. A

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further small influx in mid May added singles of *Mythimna vitellina* Hb. and *Agrius convolvuli* L., both in West Sussex.

Larger ones at the end of that month and again in the second half of June, repeated most of the common species and included most of the single examples of *Acherontia atropos* L. which were reported this year, and also the largest concentrations of *M. stellatarum* and the first *Spodoptera exigua* Hb., which was curiously far north at Spurn Point, South East Yorkshire. But only the end of July saw the first considerable influx of a scarcer species, *Hyles gallii* Rott., of which all the nine imagines reported were between July 24 and 31, and may have produced the large larvae found on September 9 and October 10. These were apparently accompanied by further large batches of *V. atalanta* and *P. xylostella* and by a few *C. croceus*, *P. saucia* and a single record of *H. livornica*.

The great immigrations of *R. sacraria* L. began on August 16 and the records reached their first peak on the nights of August 21 to 24. There was a second wave in the first days of September and a third, much the largest, from September 17 to 21. After that the records fell away sharply for the rest of the month, with a further small rise from October 5 to 7; a few singles reported at the end of it, when *O. obstipata* showed its only considerable numbers and *P. saucia* was still very numerous. The season appeared to have been closed by prolonged cold nights and northerly winds, throughout November and the first half of December. There was, however, a surprising aftermath with the return of mild and south westerly winds in the last ten days of the year, when about a dozen *C. cardui* were seen, spread along the south coast from Cornwall to Sussex. No immigrant moths were reported, but this may have been due only to a lack of nocturnal observation at that time.

Of the common butterflies *Vanessa atalanta* had a good year. The first noted was on March 31, the last on December 31, in Mayfair, London. Its range northwards reached to Keiss in Caithness as early as April 24, the Isle of Canna on May 14, with fully grown larvae in mid July and one inside a window on December 9, and Ross-shire, Sutherland and Orkney in June and July with further records later. There were clearly defined immigrations in late April, including some seen flying into Dorset on April 24; at the end of May and in early June; another in the last days of July and the first of August. On August 20, in East Cornwall some 200 were seen on Eame Head, and in early September over 300 were counted along a cliff path between Seaton and Looe and a further 500 on Penlee Head on September 26; in South Devon, on September 18 an estimated 500 were seen coming over the cliffs between Sour Mill Cove and Salcombe, and on September 27 100 at Start Point. By then it was almost ubiquitous along the south west coast; but from Dorset eastwards and in inland counties the numbers reported were never large. Up the east coast it was noted only thinly in East and West Norfolk and at Spurn Point, South East Yorkshire. Very

few larvae were reported, and though the scatter and dating of records indicates that local breeding must have made some contribution to the total abundance, it was much less than that from primary immigration.

Cynthia cardui was first noted, singly on March 3 at Porton, Wilts and shared in later immigrations of *V. atalanta*, but was always very much scarcer and was usually seen only singly even along the south coast. Inland it was seen in Bedfordshire, Berkshire, Middlesex, Surrey, Worcestershire, Warwickshire, and the most northerly coastal record was of six at Spurn Head, Yorkshire. It did, however, end the year with a surprise influx from December 18 to early January 1988 along the south coast from Cornwall to Sussex. As numbers of *C. cardui* so late in the year are virtually unknown, we have summarised over twenty records at the end of Annexe II. Most of them seem to have been rewards for post prandial strolls on Christmas Day.

C. croceus was seen singly at Axminster, South Devon, April 29, Christchurch, Hants, May 13, near Swanage, Dorset, May 26, and again at Axminster, June 26; but the first sizeable influx came only from July 31 to August 8, when a dozen were reported. There were some more in mid August, with the largest record of the year, about 20, at Weymouth, Dorset on August 19. After that it was fairly numerous in the south western counties, the last being at Axminster on October 26. Elsewhere it was very scarce, East Sussex, eight, July 30/August 8; Middlesex, three; South Wilts, three, August 15/October 10; singles only in south Hants; West Kent, 31.8; Carmarthen 26.9; Pembroke, 27.9; Berks, 31.8; Worcestershire, 26.9; Guernsey 1.10. The year's total of under 100 was much lower than normal, and local breeding anywhere was unlikely.

Of the common moths, *Autographa gamma* L. alone had a fairly good season. Nine were noted from April 19 to 30, at Rogate, West Sussex, Wareham Forest, Dorset, Ringwood, Hants, Fernham, Berks, Axminster, South Devon, and Leigh, Surrey. Late May and early June arrivals were perhaps up to the average. It was common as far north as Orkney from June 6 to early October, and five full-grown larvae were found on September 19. Large influxes were noted from July onwards along the south coast, where it became generally abundant, as for example near Salcombe, Devon, where on September 18, a swarm of 150 - 200 were feeding from a small patch of thistles on the cliff top. The last was noted on December 4 on a fence at Surbiton, Surrey.

Agrotis ipsilon was first seen at Ringwood, Hants and Worth Matravers, Dorset on March 24 and 26; then in April in several places, including one in Orkney on April 15, after which it was widespread but nowhere really common. The last were seen at Sandwich Bay, Kent and Woldingham, Surrey on October 27. *Peridroma saucia* was also seen in April, at South Croydon, Surrey, but it was very scarce until mid

August, but continued until late October, with the last in South Essex on November 17.

The diurnal *Macroglossa stellatarum* was only once noted in April, this at Worth Matravers over narcissi on April 28, but the influxes which are usual in late May and through June gave about 40 records and several females were seen ovipositing, including one on 14.6 at Swanage, Dorset on Madder. It was numerous also in July, but thereafter numbers fell and their dates were much spread, indicating that some at least of those seen may have been offspring of earlier arrivals. The last were seen on St Mary's, Scilly on October 22 and 23. Moths were reported in all the south coastal counties and in Essex in the east.

Surprisingly, one was also found on a ship at Stackpole, Orkney on July 28. Inland the only reports of it were in North Hants, at Leckford, July 2, September 12, in Warwickshire at Charlecote, June 22 and 27, July 30 and 31, and at Worcester, a larva. The total of under 100 reported in the year was rather below average.

The Tineoid *Plutella xylostella* was common during the April immigration and was reported in many places later, reaching a peak in the last half of July but declining rapidly later until the last was noted at Burghclere, North Hampshire, on October 10. Though clearly some of them came in as immigrants, especially in April and July, the general pattern of the records suggests that many others resulted from local breeding either by permanent residents or earlier arrivals. Its range extended on the eastern side to Yorkshire, Ross-shire and Orkney.

The usually abundant Pyralid *Nomophila noctuella* attracted attention by its unwonted scarcity. Several observers reported its complete absence from their traps. Though it was first reported at Winchester on April 28, and the numbers improved somewhat in mid September, it was nowhere really common and the last were seen as singles at Ninfield, East Sussex on October 30 and 31. *Udea ferrugalis*, after the first at Trebrowbridge, West Cornwall on April 30 was scarce until early August, after which numbers built up well through September and October and the last were seen at Bramley, Surrey on November 8 and Bradwell-on-Sea, Essex, on November 11. The Noctuid *Peridroma saucia* showed a rather similar pattern. From the first at Coulsdon, Surrey, April 30 it was hardly noted until the end of July and early August, but built up to approach its usual frequency through the autumn to the last at Bradwell-on-Sea on November 12. This was mainly along the south coast, but it also reached Beetham, Westmorland and inland in Berks, Wilts, Herts, Bucks, Warks, and on the east coast Spurn Point, Yorkshire, where the only sighting was one on November 2.

The scarcer species are fully detailed in Annexe II, but the great influx of *Rhodometra sacraria* requires special mention. Its total of over 800 accounts for three quarters of all those listed. This is below that for the

last year of abundance in 1983 (c.1090) and for the highest known in 1947 (c.1250). But in both those years considerable immigrations began in July and earlier, whereas in 1987 the first were seen only in mid August and, except possibly for half a dozen at the end of August all must have been primary immigrants. Though they were reported by some seventy observers, most were at regularly operated light traps. The presence or absence of these no doubt distorts somewhat the numbers for each county. But it is clear that the main points of arrival were along the south coast, especially from South Devon eastwards, and in South Essex; only singles were seen as far north as Westmorland and South East Yorkshire. Inland there were very few except in North Hants, Berks and Surrey, and mainly only singles in Herts, Middlesex, Northants, Oxon, Wilts and Works. The main home of *R. sacraria* abroad is believed to be in North Africa, but in 1987 records of other immigrants likely to have come from there seem to have been associated with it.

Agrius convolvuli, with c.140 reported, and *Mythimna vitellina*, with 52, were perhaps in normal numbers, both mainly in the autumn. *Helicoverpa armigera* with 22 reported was certainly above normal, and *Hyles gallii*, though only nine moths and some larvae were seen, is interesting for its concentration of arrivals in the last days of July combined with their very wide scatter between South Devon, Sussex, Kent, Berks, Norfolk, Notts, Westmorland and Shetland.

There are broad similarities between 1986 and 1987 both in weather conditions and in the numbers of wholly immigrant scarce species recorded, 28 and 27 respectively, but also large differences. 1987 had its great number of *R. sacraria* and good showings of *A. convolvuli* and *M. vitellina*, both of which were scarce in 1986 when *H. peltigera* was the only species with large numbers: in 1987 only one was reported. But 14 of the other scarce species which were present in 1986 were not seen in 1987, in which 11 species seen were not present in 1986. The usually common immigrants were present in both years, but *V. atalanta*, *A. gamma* and *P. saucia* were markedly more numerous in 1987, while *C. croceus* was hardly seen before August and was much scarcer later even in the south west, with a total of only about 150 reported against over 200 in 1986. These differences in composition in numbers are hard to explain. The great 1987 abundance of *R. sacraria*, coming with "Sahara dust" from mid August onwards must surely have been due to abnormal circumstances in its African homeland, and the abundance of some other species from mid September onwards may have been due to several very strong south west gales, though the "hurricane" of October 15 over south and south east England seems to have had little discernible effect on numbers.

ANNEXE I

Names of Recorders

Arnold, N., Badmin, J., Baker, B.R., Baker, P.J., Baldock, D.W., Bascomb, K.N., Bell, R.A., Bond, K.G.M., Bowdrey, J.P., Bowley, R., Bretherton, R.F., Bretherton, M.F., Briggs, J., Brooks, Miss M.M., Brown, D.C.G., Brydon, I., Cade, Martin, Campbell, J.L., Chalmers-Hunt, J.M., Chatelain, R.G., Clarke, Dr J.H., Collins, C.B., Collins, G.A., Corley, M.H.V., Costen, Dr P.D.M., Culpin, John, Dey, D., Dewick, A.J. & S., Dobson, A.H., Dyke, R., Eastwick-Field, G.G., Else, G., Emmet, A.M., Fairclough, R., Ferguson, I.D., Finch, G.L. & M.D., Gardner, A.F.J., Greatorex-Davies, J.N., Granville, U.M.C., Green, J.E., Greenwood, J.A.C., Grey, P.R., Halsey, J. & M., Halstead, A.J., Hardy, P.B., Harmer, A.S., Harrop, Mrs M., Haynes, R.F., Heckford, R., Henwood, B., Higgs, G.E., Hornby, Dr R.J., Hunter, I., Hulme, D.C., Jenkins, A., Jones, N.R., Knill-Jones, S.A., Lane, Roger, Lane, R.E. & C.E., Langmaid, Dr J.R., Levertron, R., Lorimer, R.I., Lowe, R.T., MacFadyan, I., MacKinnon, Mrs W., Macnulty, Dr B.J. Madge, Steve, Moore, B.W., Myers, Dr A.A., Nash, S., Oates, M., Odell, S., O'Heffernan, H.L., O'Keeffe, D., Owen, Prof. J.A., Palmer, Mrs C., Palmer, S., Parsons, Mark, Paul, John, Payne, J.H., Pelham-Clinton, E.C., Penhallurick, R.D., Phillips, J.W., Philpott, V.W., Plant, C.W., Pollard, E., Pooles, S.W.P., Porter, J., Potts, P.M., Pratt, C.R., Pyman, G.A., Radford, J.T., Reed, M., Rollins, C.C., Rutherford, C.I., Simpson, Dr A.N.B., Skinner, B., Smith, E.G. & M.H., Smith, Dr F.H.N., Softly, R.A., Sokoloff, P.A., Spalding, A., Spence, B.R., Sterling, Col. D.H., Sterling, M.J., Sterling, P.H., Stirling, P.M., Swanson, S., Swift, S., Terry, M.G.W., Townsend, Martin, Tucker, N.A., Tucker, V., Walters, John, Walters, J.M., Waring, Paul, West, B.K., Williams, L.P., Wilson, D.E., Wild, E.H., Winter, P.Q., Wright, Sheila.

(To be concluded)

A NEW ASSOCIATION FOR COLEOPTERISTS — we have received details of the formation of the "Asociacion Europea de Coleopterologia", whose objectives are to provide a forum for coleopterists on a world-wide scale to exchange views through Bulletins and Monographic reviews, annual meetings, lectures, symposia etc. Further details are available from the Secretary, Dr T. YeLamos, Facultad de Biologia, Universidad de Barcelona, Diagonal 645, Spain.—Editor.

Thera cupressata GEY. (LEP.: GEOMETRIDAE) — A MOTH NEW TO MAINLAND BRITAIN — Further to the interesting and informative notes of *T. cupressata* recently published by Costen and Peet (*Ent. Rec.* **98**: 217-218), a specimen of this insect was discovered in the collection of J. Radford by Bernard Skinner. The moth had been taken at m.v. light on 1.xi.1984 at Walberton, West Sussex, and was accompanied by *Mythimna albipuncta*, *M. unipuncta* and *Orthonama obstipata*. It also coincided with the warmest day-time November temperature since the Second World War. COLIN PRATT, 5 View Road, Peacehaven, Newhaven, East Sussex.